



IN THE CLAIMS:

Please AMEND claims 1-57 and 58-69 as shown below.

1. (Currently Amended) A method₁ ~~for providing resource discovery~~ comprising:

sending a first request message having a first selected scope;

analyzing whether a confirm message is received from a discovered resource within the first selected scope in response to the first request message; and

sending a second request message having a second selected scope when a confirm message is not received from a discovered resource in response to the first request message, the second selected scope being greater than the first selected scope,

wherein the method is configured to provide resource discovery.

2. (Currently Amended) The method of claim 1, wherein the analyzing further comprises:

setting a timer in response to the first request message being sent₁;

detecting whether a confirm message is received before the timer expires₁; and

terminating the resource discovery procedure when a confirm message is received prior to the expiration of the timer.

3. (Currently Amended) The method of claim 2, wherein the detecting further comprises:

determining whether a scope increase is allowed when a confirm message is not received before the expiration of the timer;₁

terminating the resource discovery procedure when a scope increase is not allowed;₁

increasing the scope to the second selected scope when a scope increase is allowed;₁

and

resetting the timer.

4. (Currently Amended) The method of claim 3, wherein the determining further comprises inspecting fields of a response message and determining whether a scope increase is allowed based upon the response message and policies included therein.

5. (Currently Amended) The method of claim 1, wherein the sending further comprises transmitting the request message to a known multicast group.

6. (Currently Amended) The method of claim 1, ~~wherein~~ further comprising:
configuring the selected scope to comprises a hop count, ~~the hop count representing~~
that represents a number of nodes in a multicast tree ~~that~~ in which the request message propagates.

7. (Currently Amended) The method of claim 6, further comprising:
decrementing the hop count at a node in the multicast tree receiving the request message; and

forwarding the request message to a next node in the multicast tree.

8. (Currently Amended) The method of claim 1, wherein the sending the request message further comprises sending parameters for ~~analyzes~~analysis by a node receiving the request message.

9. (Currently Amended) The method of claim 8, wherein the sending the parameters further comprises sending hop-by-hop parameters, the hop-by-hop parameters being modified by intermediate nodes during the propagation of the request message in the multicast tree.

10. (Currently Amended) The method of claim 8, wherein sending the parameters further comprises sending destination parameters, the destination parameters being used by a resource being discovered using the request message to determine whether the resource responds using a confirm or a reject message.

11. (Currently Amended) The method of claim 1, further comprising:
receiving the request message at a node in a multicast tree;
decrementing a hop count included in the scope;
modifying hop-by-hop parameters;
determining whether the hop count is equal to zero;
passing the request message down the multicast tree when the hop count is not equal to zero;
examining destination parameters in the request message; and

unicasting a response message in response to the request message.

12. (Currently Amended) The method of claim 11, wherein the unicasting the response message comprises

unicasting a decision field ~~for indicating~~that indicates whether the response is a confirm message or a reject message,

unicasting a returned hop count representing a value of the hop count field at the time the request message was received by the node, and

unicasting a returned hop-by-hop parameter field representing a value of hop-by-hop parameters received by the node in the request message after modification by the node.

13. (Currently Amended) A ~~method for locating an endpoint for setting up a connection, the method comprising:~~

sending a first request message having a first selected scope to a known multicast group;

setting a timer responsive to the first request message being sent;

detecting whether a confirm message is received from an endpoint before the timer expires;

terminating endpoint locating when a confirm message is received from an endpoint prior to the expiration of the timer;

determining whether a scope increase is allowed when a confirm message is not received from an endpoint before the expiration of the timer;

terminating endpoint locating when a scope increase is not allowed;

increasing the scope to the second selected scope when a scope increase is allowed;
resetting the timer; and
sending a second request message having the second selected scope when a confirm message is not received from an endpoint in response to the first request message, the second selected scope being greater than the first selected scope,

wherein the method is configured to locate a suitable endpoint for setting up a connection.

14. (Currently Amended) The method of claim 13, wherein the determining further comprises inspecting fields of a response message and determining whether a scope increase is allowed based upon the response message and policies included therein.

15. (Currently Amended) The method of claim 13, wherein the having the selected scope comprises having a hop count, ~~the hop count~~ representing a number of nodes in a multicast tree ~~that~~ in which the request message propagates.

16. (Currently Amended) The method of claim 15, further comprising:
decrementing the hop count at a node in the multicast tree receiving the request message; and
forwarding the request message to a next node in the multicast tree.

17. (Currently Amended) The method of claim 13, wherein the sending the request message ~~further comprises~~ sending parameters for ~~analyzes~~analysis by a node receiving the request message.

18. (Currently Amended) The method of claim 17, wherein the sending the parameters further comprises sending hop-by-hop parameters, the hop-by-hop parameters being modified by intermediate nodes during the propagation of the request message in the multicast tree.

19. (Currently Amended) The method of claim 17, wherein the sending the parameters further comprises sending destination parameters, the destination parameters being used by an resource being discovered using the request message to determine whether the resource responds using a confirm or a reject message.

20. (Currently Amended) The method of claim 13, further comprising:
receiving the request message at a node in a multicast tree;
decrementing a hop count included in the scope;
modifying hop-by-hop parameters;
determining whether the hop count is equal to zero;
passing the request message down the multicast tree when the hop count is not equal to zero;
examining destination parameters in the request message; and
unicasting a response message in response to the request message.

21. (Currently Amended) The method of claim 20, wherein the unicasting the response message comprises

unicasting a decision field ~~for indicating~~that indicates whether the response is a confirm message or a reject message,

unicasting a returned hop count representing a value of the hop count field at the time the request message was received by the node; and

unicasting a returned hop-by-hop parameter field representing a value of hop-by-hop parameters received by the node in the request message after modification by the node.

22. (Currently Amended) An article of manufacture ~~for providing resource discovery using multicast scope selection~~, the article of manufacture comprising a computer readable medium having instructions for causing a processor to locate a resource for establishing a connection thereto according to a method, the method comprising:

sending a first request message having a first selected scope;

analyzing whether a confirm message is received from a discovered resource within the first selected scope in response to the first request message; and

sending a second request message having a second selected scope when a confirm message is not received from a discovered resource in response to the first request message, the second selected scope being greater than the first selected scope,

wherein the article of manufacture is configured to provide resource discovery using multicast scope selection.

23. (Currently Amended) The article of manufacture of claim 22, wherein the analyzing further comprises:

setting a timer in response to the first request message being sent;
detecting whether a confirm message is received before the timer expires; and
terminating the resource discovery procedure when a confirm message is received prior to the expiration of the timer.

24. (Currently Amended) The article of manufacture of claim 23, wherein the detecting further comprises:

determining whether a scope increase is allowed when a confirm message is not received before the expiration of the timer;
terminating the resource discovery procedure when a scope increase is not allowed;
increasing the scope to the second selected scope when a scope increase is allowed;
and
resetting the timer.

25. (Currently Amended) The article of manufacture of claim 24, wherein the determining further comprises inspecting fields of a response message and determining whether a scope increase is allowed based upon the response message and policies included therein.

26. (Currently Amended) The article of manufacture of claim 22, wherein the sending further comprises transmitting the request message to a known multicast group.

27. (Currently Amended) The article of manufacture of claim 22, wherein the selected scope comprises a hop count, the hop count representing a number of nodes in a multicast tree ~~that~~ in which the request message propagates.

28. (Currently Amended) The article of manufacture of claim 27, wherein the method further comprising comprises decrementing the hop count at a node in the multicast tree receiving the request message and forwarding the request message to a next node in the multicast tree.

29. (Currently Amended) The article of manufacture of claim 22, wherein the request message further comprises parameters for ~~analyzes~~ analysis by a node receiving the request message.

30. (Currently Amended) The article of manufacture of claim 29, wherein the parameters further comprise hop-by-hop parameters, the hop-by-hop parameters being modified by intermediate nodes during the propagation of the request message in the multicast tree.

31. (Currently Amended) The article of manufacture of claim 29, wherein the parameters further comprise destination parameters, the destination parameters being used by ~~an~~ a resource being discovered using the request message to determine whether the resource responds using a confirm or a reject message.

32. (Currently Amended) The article of manufacture of claim 22, wherein the method further comprises:

- receiving the request message at a node in a multicast tree;
- decrementing a hop count included in the scope;
- modifying hop-by-hop parameters;
- determining whether the hop count is equal to zero;
- passing the request message down the multicast tree when the hop count is not equal to zero;
- examining destination parameters in the request message; and
- unicasting a response message in response to the request message.

33. (Currently Amended) The article of manufacture of claim 32, wherein the response message comprises

- a decision field ~~for indicating~~ that indicates whether the response is a confirm message or a reject message,

- a returned hop count representing a value of the hop count field at the time the request message was received by the node, and

- a returned hop-by-hop parameter field representing a value of hop-by-hop parameters received by the node in the request message after modification by the node.

34. (Currently Amended) A discoverer, comprising:

- a discovery unit; and

an application, operatively coupled to the discovery unit, the application ~~sending~~
configured to send a notification to the discovery unit ~~for locating~~to locate an endpoint
application;

wherein the discovery unit is configured to sends a first request message having a
first selected scope to a multicast group, analyzes whether a desired confirm message is
received from an endpoint application in response to the first request message, ~~and~~and sends a
second request message having a second selected scope when a desired confirm message is
not received from the endpoint application in response to the first request message, wherein
the second selected scope ~~being~~is greater than the first selected scope.

35. (Currently Amended) The discoverer of claim 34, further comprising:
a timer ~~for setting~~configured to set a window ~~for receiving~~in which to receive the
desired confirm message, wherein the discovery unit ~~sets~~is configured to set the timer in
response to the first request message being sent, to detects whether a confirm message is
received before the timer expires, and to terminates the location of ~~an~~ endpoint when a
confirm message is received prior to the expiration of the timer.

36. (Currently Amended) The discoverer of claim 35, wherein the discovery unit
is configured to determines whether a scope increase is allowed when a desired confirm
message is not received before the expiration of the timer, to terminates the location of an
endpoint when a scope increase is not allowed, and to increases the scope to the second
selected scope and reset the timer when a scope increase is allowed ~~and resets the timer~~.

37. (Currently Amended) The discoverer of claim 36, wherein the discovery unit ~~determines~~ is configured to determine whether a scope increase is allowed when a confirm message is not received before the expiration of the timer based upon the received response message and policies included therein.

38. (Currently Amended) The discoverer of claim 34, wherein the selected scope comprises a hop count, and the hop count represents a number of nodes in a multicast tree ~~that~~ in which the request message propagates.

39. (Currently Amended) The discoverer of claim 34, wherein the request message further comprises parameters for analysis by a node receiving the request message.

40. (Currently Amended) The discoverer of claim 39, wherein the parameters further comprises hop-by-hop parameters, the hop-by-hop parameters being modified by intermediate nodes during the propagation of the request message in the multicast tree.

41. (Currently Amended) The discoverer of claim 39, wherein the parameters further comprise destination parameters, the destination parameters being used by an endpoint to determine whether the resource responds using a confirm or a reject message.

42. (Currently Amended) The discoverer of claim 34, wherein the application and the discovery unit are co-located.

43. (Currently Amended) The discoverer of claim 34, wherein the application and the discovery unit are not co-located.

44. (Currently Amended) The discoverer of claim 43, wherein the discovery unit comprises at least one of a base transceiver station, a base station controller, or a mobile services switching center.

45. (Currently Amended) The discoverer of claim 43, wherein the application comprises a mobile terminal.

46. (Currently Amended) A discoverer, comprising:
a discovery means for providing resource discovery; and
a notification means operatively coupled to the discovery means, for sending a notification to the discovery means ~~for locating~~ to locate an endpoint application;
wherein the discovery means comprises:
means for sending a first request message having a first selected scope to a multicast group;
means for analyzing whether a desired confirm message is received from an endpoint application in response to the first request message; ~~and~~
means for sending a second request message having a second selected scope when a desired confirm message is not received from the endpoint application in response to the first request message;
wherein the second selected scope is greater than the first selected scope.

47. (Currently Amended) The discoverer of claim 46, further comprising:
a timer for setting a window ~~for receiving~~in which to receive the desired confirm message,

wherein the discovery means further comprises
means for setting the timer in response to the first request message being sent,
means for detecting whether a confirm message is received before the timer expires,
and

means for terminating the location of an endpoint when a confirm message is received prior to the expiration of the timer.

48. (Currently Amended) The discoverer of claim 47, wherein the discovery means further comprises

means for determining whether a scope increase is allowed when a desired confirm message is not received before the expiration of the timer,

means for terminating the location of an endpoint when a scope increase is not allowed,

means for increasing the scope to the second selected scope when a scope increase is allowed, and

means for resetting the timer.

49. (Currently Amended) The discoverer of claim 48, wherein the discovery means further comprises

means for determining whether a scope increase is allowed when a confirm message is not received before the expiration of the timer based upon the received response message and policies included therein.

50. (Currently Amended) The discoverer of claim 46 wherein the selected scope comprises a hop count, and the hop count represents a number of nodes in a multicast tree ~~that~~ in which the request message propagates.

51. (Currently Amended) The discoverer of claim 46, wherein the request message further comprises parameters for analysis by a node receiving the request message.

52. (Currently Amended) The discoverer of claim 51, wherein the parameters further comprises hop-by-hop parameters, the hop-by-hop parameters being modified by intermediate nodes during the propagation of the request message in the multicast tree.

53. (Currently Amended) The discoverer of claim 51, wherein the parameters further comprise destination parameters, the destination parameters being used by an endpoint to determine whether the resource responds using a confirm or a reject message.

54. (Currently Amended) The discoverer of claim 46, wherein the notification means and the discovery means are co-located.

55. (Currently Amended) The discoverer of claim 46, wherein the notification means and the discovery means are not co-located.

56. (Currently Amended) The discoverer of claim 55, wherein the discovery means comprises at least one of a base transceiver station, a base station controller, or a mobile services switching center.

57. (Currently Amended) The discoverer of claim 55, wherein the notification means comprises a mobile terminal.

58. (Previously Presented) A computer program product encoding a computer program of instructions for causing a processor to locate a resource for establishing a connection thereto according to a method, the method comprising:

 sending a first request message having a first selected scope;

 analyzing whether a confirm message is received from a discovered resource within the first selected scope in response to the first request message; and

 sending a second request message having a second selected scope when a confirm message is not received from a discovered resource in response to the first request message, the second selected scope being greater than the first selected scope.

59. (Currently Amended) The computer program product of claim 58, wherein the analyzing further comprises:

 setting a timer in response to the first request message being sent;

detecting whether a confirm message is received before the timer expires; and
terminating the resource discovery procedure when a confirm message is received
prior to the expiration of the timer.

60. (Currently Amended) The computer program product of claim 59, wherein
the detecting further comprises:

determining whether a scope increase is allowed when a confirm message is not
received before the expiration of the timer;

terminating the resource discovery procedure when a scope increase is not allowed;

increasing the scope to the second selected scope when a scope increase is allowed;

and

resetting the timer.

61. (Currently Amended) The computer program product of claim 60, wherein
the determining further comprises inspecting fields of a response message and determining
whether a scope increase is allowed based upon the response message and policies included
therein.

62. (Currently Amended) The computer program product of claim 58, wherein
the sending further comprises transmitting the request message to a known multicast group.

63. (Currently Amended) The computer program product of claim 58, wherein the selected scope comprises a hop count, the hop count representing a number of nodes in a multicast tree ~~that~~ in which the request message propagates.

64. (Currently Amended) The computer program product of claim 63, ~~further comprising wherein the method further comprises~~ decrementing the hop count at a node in the multicast tree receiving the request message and forwarding the request message to a next node in the multicast tree.

65. (Currently Amended) The computer program product of claim 58, wherein the request message further comprises parameters for ~~analyzes~~ analysis by a node receiving the request message.

66. (Currently Amended) The computer program product of claim 65, wherein the parameters further comprises hop-by-hop parameters, the hop-by-hop parameters being modified by intermediate nodes during the propagation of the request message in the multicast tree.

67. (Currently Amended) The computer program product of claim 65, wherein the parameters further comprise destination parameters, the destination parameters being used by ~~an~~ a resource being discovered using the request message to determine whether the resource responds using a confirm or a reject message.

68. (Currently Amended) The computer program product of claim 58 wherein the method further comprises:

- receiving the request message at a node in a multicast tree;₁
- decrementing a hop count included in the scope;₁
- modifying hop-by-hop parameters;₁
- determining whether the hop count is equal to zero;₁
- passing the request message down the multicast tree when the hop count is not equal to zero;₁
- examining destination parameters in the request message;₁ and
- unicasting a response message in response to the request message.

69. (Currently Amended) The computer program product of claim 68₁ wherein the response message comprises a decision field ~~for indicating~~that indicates whether the response is a confirm message or a reject message, a returned hop count representing a value of the hop count field at the time the request message was received by the node₁ and a returned hop-by-hop parameter field representing a value of hop-by-hop parameters received by the node in the request message after modification by the node.